



Docket No.: H0678.70008US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hanjun Luo et al.
Serial No.: 10/723,385
Confirmation No.: 8005
Filed: November 25, 2003
For: 802.1X PROTOCOL-BASED MULTICASTING CONTROL
METHOD
Examiner: E. L. Moise
Art Unit: 2137

Certificate of Mailing Under 37 CFR 1.8(a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: July 27, 2007

Eileen M. MacKenzie
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AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action mailed February 1, 2007, please amend the above-identified U.S. patent application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 5 of this paper.

Remarks/Arguments begin on page 7 of this paper.

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraphs beginning on page 2, line 4, under Summary of the Invention with the following amended paragraphs:

It is the object of the present invention to provide an 802.1X protocol-based multicasting control method to implement controllability of addition of subscriber to multicasting group.

To attain the above object, an 802.1X protocol-based multicasting control method, comprising the following steps:

Step 1: performing 802.1X authentication for a subscriber and storing authenticated subscriber information;

Step ~~[[1]]~~ 2: intercepting ~~[[the]]~~ a request message for joining in a multicasting group sent ~~[[by an]]~~ from the authenticated subscriber;

Step ~~[[2]]~~ 3: obtaining ~~[[the]]~~ a port number, ~~[[and]]~~ a MAC address and a multicasting IP address of the subscriber from the request intercepted message;

Step ~~[[3]]~~ 4: searching corresponding subscriber account information ~~[[from]]~~ in the 802.1X authenticated ~~[[data]]~~ subscriber information according to said port number and MAC address;

Step ~~[[4]]~~ 5: authenticating the subscriber's account number information and the multicasting IP address, and then adding the subscriber to the multicasting group if the authentication is passed successfully; otherwise rejecting the subscriber's request ~~is rejected~~.

~~Said method further comprises~~ In step 5, ~~[[the]]~~ an authentication server at 802.1X authentication end is ~~utilized~~ used to authenticate the subscriber's account number information and the multicasting IP address.

The authentications of subscriber's account number information and the multicasting IP address are implemented through verifying whether the multicasting IP address is authorized to ~~accept the subscriber with~~ receive said account number information.

If said 802.1X authentication is based on port ~~authentication~~, when a subscriber attached to said port makes a request for joining in a multicasting group, the subscriber's MAC address is searched for first; if said MAC address is found, the subscriber's account number information is searched for according to said MAC address and said port number;

if said 802.1X ~~protocol~~ authentication is based on MAC ~~authentication~~, when a subscriber attached to said port makes a request for joining in a multicasting group, the subscriber's account number information is searched for directly according to the subscriber's MAC address and the port number.

The subscriber joins in the multicasting group through IGMP protocol.

According to the method of the present invention, when a subscriber authenticated through 802.1X protocol requests to join in a multicasting group, the request message for joining in the multicasting group is intercepted first, and then the subscriber's port number, ~~[[and]]~~ MAC address and account number information ~~[[is]]~~ are obtained from said intercepted message instead of adding the subscriber directly to the multicasting group, then corresponding subscriber information is searched for from the 802.1X authenticated ~~[[data]]~~ subscriber information according to said port and MAC address information, and the subscriber's account number and multicasting IP address are authenticated again, and then the subscriber is added to the multicasting group if the authentication is passed successfully, otherwise the subscriber's request is rejected. Said solution can implement controlled multicasting, authentication of the legality of adding to multicasting, and accounting; in

addition, said method doesn't require modification to multicasting client software or server software, instead, only simple configuration at 802.1X device end and authentication server at authentication end is necessary, it is advantageous for protection of existing investment and compatibility to existing software.